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Proposed scenarios for assessing Social Resilience of Urban Open Spaces in the “arrival” cities of Greece

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Abstract: Since 2015, the influx of refugees in the Greek cities - such as Thessaloniki and Ioannina in the mainland, Chios and Mytilene in the islands - has resulted in social instability, exacerbating an already tenuous situation accrued by the economic crisis, as denoted by Sakellis et al. in 2016. In the light of the Smart City narrative and the use of digital tools in everyday urban practices, Greek cities have done very little to incorporate digital technologies to fortify their social resilience. This study aims to investigate on co-creation digital platforms and propose scenarios for the refugees’ social integration process. The study focuses on the open spaces of the “arrival” cities, where the coming of refugees challenged the social capacity and adaptability of local communities. The literature review concerns the analysis of terms of Social Resilience and Urban Informatics and how they catalyze urban planning. The main research hypothesis is that the use of digital tools related with the use of public spaces reveals urban disparities and could help users transform unattended open spaces in the city into incubators of inclusive planning ideas. In addition, it is assumed that digital co-creation platforms applied in the use of urban open spaces sparkle incentives for the process of refugees’ social integration and enhance the adaptability of the local communities. In the end, the proposed scenarios in the use of digital platforms are presented as a methodology to involve refugees in decision-making processes. These scenarios aim to open a dialogue on how digital platforms could sustain the cultural co-habitation in urban open spaces, feeding the discussion about the empowerment of an increasingly diverse social capital in the “arrival” cities of Greece.

Keywords: bottom-up; urban informatics; refugee crisis

1. Introduction. Greek cities and the management of refugee crisis

Greece has a total population of 10million, half of which reside in the big cities of Athens and Thessaloniki. In 2018, a total of 32million of tourists visited Greece, a number that is constantly rising bringing about issues of sustainability and capacity for the Greek cities (Smith 2018). In parallel, in 2015, as a result of conflicts intensifying in West Asia, and mainly in Syria, the number of refugees and migrants arriving at the external border of Europe increased dramatically. The latest data by International Organization of Migration (IOM) shows that 46.4 thousand refugees reside in Greece, from whom 39.9 thousand are asylum seekers. Until today, most of the governmental operations are supported by UNHCR and international NGOs, a fact that proves that Greek cities do not have the capacity to respond adequately to this phenomenon (Sakellis, Spyropoulou and Ziomas 2016).

By the end of April 2018, non-governmental and international organizations provided almost 25 thousand places in apartments and buildings -both in mainland and in islands- to serve the most vulnerable populations (UNCHR, April, 2018). On one hand, in 2016, Impact Hub, Onassis Cultural Centre and US embassy organized the Hackathon “Hack the Camp” to find sustainable solutions for and with refugees and migrants in Greece. Among others, the “Refergon” is a digital platform, which was developed to provide an easier way for refugees to identify job opportunities through existing social networks and to acquire essential skills. On the other hand, this technological shift in crisis management has been applied also on migration surveillance. For the sake of information management, governments have employed digital technologies to increase their control over borders, migration and the access to asylum. Examples are the Eurosur, which refers to drone and satellite surveillance of the Mediterranean Sea and the Eurodac, which includes biometric information collection at the borders [10].

In the context of this paper, smart infrastructure, like digital platforms and ICT applications that are linked with the use of urban space, could help advance urban and social resilience. Thanks to media technologies, a deeper understanding of the different urban ethnographies could take place, as well as an analysis of the urban-making processes.

In Greek cities that follow the Mediterranean model, urban typologies and processes resulted from top-down policies. Suburban areas are mainly transformed into “enclaves of poverty” (Leontidou 2006) and cities are dominated by the Greek “polykatoikia” (block of apartments). The latter endures a vertical social stratification (Maloutas and Karadimitriou 2001) exacerbated by the migration flows of the last decades, when immigrants occupied the lower, smaller, once abandoned apartments. This form of co-habitation –immigrants at the lowest and basement levels, Greeks at the upper levels - exposes a layer

of social inequality and exclusion in the microscale of the housing blocks, interrupting the horizontality of precedent culturally and socially homogeneous spaces (Mpourlessas 2015). In the Greek case, the multi-ethnic city is developed vertically not horizontally and exhibits greater fragmentation and diffusion unlike the “ethnoscapes” in the global cities (Mitchell 2003).

Consequently, the research poses the following question: Could the use of technology introduced by the “smart city” or “knowledge city”, ameliorate urban pathogeneses in Greece, such as social disparities interlinked with spatial fragmentation? Could it turn urban crisis into an opportunity? How could digital co-creation platforms enhance timely-self organization, fortify social resilience and make Greek cities “smarter” and urban open spaces more inclusive from the bottom-up?

In this paper, at first it is demonstrated what has been done in the field of Urban Informatics and in what extend it facilitates urban progress and resilience. The theoretical background includes an overview of digital tools that have been recently incorporated in the making of urban space and the interaction of users in the urban context. After establishing the theoretical background, possible scenarios are proposed, which would increase the adaptability and capacity of the receptive communities in Greece. The proposed technological systems could be used as a methodology to measure social resilience of urban open spaces and capture the “bridging” of “insiders” - local residents- and “outsiders” -in the case of this research, the refugees, providing potentially an ethnographic breakdown. In the end, the proposed digital co-creation platforms would lead to the long-term integration of refugees by giving them the opportunity to participate in decision-making processes as stakeholders.

2. Research, framework and method

In the framework of this research, the concept of Smart Cities is examined to the degree that it responds to urban challenges. In most cases, context awareness and network connectivity are added to physical objects, enabling an advanced technological urban infrastructure that enhances city’s operation efficiency and new entrepreneurship (Anthopoulos, Fitsilis and Ziozias 2016). Except for the “smart cities”, other terms such as “intelligent cities” and “creative cities” emerge to describe the new status quo in urban planning and identify related trends where technology plays a dominant role. In addition, recent urban studies deal with cities’ growing patterns, their competitiveness and their residents’ livelihoods and wellbeing (McKinsey & Company 2013).

In many cases, the Smart City narrative has led to a new wave of wealth creation (Letaifa 2015), defining the new framework of “IT-based innovation urban ecosystems” (Zygiaris 2012). Therefore has incited criticism. On one hand, companies like CISCO argue that the interrelation of ICT with physical design results in a confusion of engineering and architecture ideas supported by various technologies (CISCO 2012). On the other hand, critical urban studies, feminist urbanism, and urban political ecology claim

that technology and corresponding urban policies do not serve the inclusiveness of society, causing social divisions.

2.1. Urban informatics, social resilience and new challenges in urban planning

As a term, Social Resilience refers to the ability of human communities to withstand external shocks to their social infrastructure, such as environmental variability or social, economic and political upheaval (Adger 2000). Deriving from the perspective of psychology, social resilience extends from individual level to society as a whole. In order to achieve social resilience, local governments are responsible to develop systems, platforms and mechanisms to monitor community-based activities (Shaw, et al. 2016).

Urban Informatics refer to the emerging field of urban computing and act at the intersection of cities and urban data. This interdisciplinary field takes advantage of the diverse data sources ranging from sensor networks to mobile devices and social media platforms (Psyllidis, et al. 2015). Sensor Systems as a type of urban Big Data detects activities and tracks changes in the city, providing information about the environmental conditions, the transportation flows and the condition and management of “smart” buildings. This technological intrusion affects the way urban landscapes are shaped and how they catalyze urban progress and resilience. However, in many cases, technology imposes larger inequalities and social divisions (Graham 2002) for the sake of the global market and touristic attraction, “a far cry from what would be labelled as “smart”” (Walravens 2015).

Except for sensor systems, the user-generated systems enable a holistic approach to urban research, promoting agile urban models, which detect disparities and social injustice in various sectors. Some of these are the transportation, housing, land-use, environment, health, education, economic prosperity and social break-down (Asmin 2005). This condition stimulates bottom-up efforts and self-sustaining models of growth for the less favored places, opening up a dialogue for a less authoritarian Smart City.

Furthermore, the application of Big Data in the urban context enables the improvement of urban strategies. Within a dynamic urban resource management, Big Data offers deeper insights into urban patterns and processes, urban engagement and civic participation (Thakuriah, Tilahun and Zellner 2015). In addition, the visualization of Urban Big Data challenges the way we understand and organize society and urban space, making it possible to analyze the diverse social body and yield information about users’ activities. In the end, this process of visualization could enact policy changes, synthesizing new methodologies of urban-making for the public benefit from the bottom-up (Williams 2015).

2.2. Examples of the use of digital tools in urban processes

In the context of this paper, digital tools such as co-creation and online participation platforms are examined to reflect various facets of the smart city narrative applications. Main objective is to highlight

the idea of citizen-centricity in innovation systems, social enterprises and co-creation platforms and most of them are collectively presented Figure 1. These typologies integrate research and innovation processes in actual communities and settings based on the co-creation of users. As a result, new city models could emerge, which would propose digital solutions for the mitigation of social exclusion and accessibility in public spaces (Cardullo 2017).

Name	Typology	Tools' Description	Purpose	Creator	Place	Date	Web Link
CommunityViz	Planning Support System (PPS), software extension	GIS based planning software for city planners	Make planning process accessible to ordinary citizens	N. Fritzinger, L. Orton.	USA	1990	http://communityviz.city-explained.com
UrbanSim	Planning Support System (PPS), software	Urban simulation system, 3D visualization for metropolitan planning	Exploring alternative plans and improving communities . Modelling interactions between land use, transportation, the economy, and the environment	Paul Waddel	USA	1998	http://www.urbansim.com
Synchronicity	Living Lab	Route calculation, parking estimator, traffic flow estimation, map visualization, time series visualization	Opening a global IoT market where cities and businesses develop shared digital services to improve the lives of citizens and grow local economies	call by Horizon 2020	EU	2018	https://synchronicity-iot.e
Spacehive	Social Enterprise	Crowdfunding Platform that connects project ideas to relative stakeholders and grant-makers to fund them	Posting ideas, crowdfunding, attracting grants	Chris Gourlay	UK	2012	https://www.spacehive.com/
Neighborly	Online Investment Platform	Civic crowdfunding platform	Financing public projects, while	Jase Wilson, Patrick Hosty	USA	2012	https://neighborly.com/

		for civic projects	earning interest on investments with municipal bonds				
Publicspace.tools	Media platform	A "digital toolkit" to share and customize urban issues related with public space	Supporting groups to reclaim public space as a Commons	Straddle3, WWB, LaFabrikadet odalavida	Spain	2015	https://publicspace.tools/#/home
Social Glass	Crowd-sourcing digital Platform	Numan-enhanced social data acquisition, integration, enrichment, analysis, and visualization	Combining machine learning, data science, human computation and user modelling to study spatial, temporal and social aspects of the activities, movement and social connectivity of people	TU Delft	The Netherlands	2015	http://social-glass.tudelft.nl
Decide Madrid	Open Governemnt Platform	Recommender Systems applied for increasing civic involvement in decision-making processes	Upgrade relations among stakeholders in civic society	Madrid City Council	Madrid, Spain	2015	https://decide.madrid.es/
CivicWise	crowdsourcing and co-design digital Platform	International distributed and open network for the collaborative urbanism and territory making projects	promoting citizen engagement, developing skills and tools to build collaboration between citizens, academia, public and private decision makers	Civic Innovation School	Spain	2-14	https://civicwise.org

Figure 1. Examples of digital tools

The digital tools presented above help to identify the spectrum of digital applications, inspiring the proposed scenarios referred below. The method building of the current research is stimulated by cases of digital platforms where citizens can get involved and influence urban policies and economies. More

specifically, beginning from the Planning Support Systems and expanding until the most recent machine learning applications, digital tools have gradually become more user friendly, allowing the non-experts to participate in decision-making processes and influence city-making through transparent and democratic procedures. What is further proposed here is that digital platforms could respond to challenges beared by the symbiosis of urban ethnographies in the public space.

3. Bridging local and refugees through the use of digital platforms

3.1. Refugee crisis in the digitalized era

Refugees rely on digital infrastructure to establish their migration routes, engaging with social media platforms to acquire valuable information on borders, routes, weather conditions, and safe places to stay, as well as to communicate with family members (Latonero and Kift P. 2018). Most of the displaced population cross the EU borders through the “WhatsApp way” (Frouws, et al. 2016), which is enriched by user-generated, networked and real-time updates. Sanchez-Querubin and Rogers (2018), examined the dynamics of data mining through digital platforms in reconceptualizing the migration “route-work” as “platform-work”. In this approach, routes and destinations are “reviewed” through the number of “likes” and “shares”, uncovering the reputation and the potential danger of smugglers. This approach establishes a new framework of migration metrics interconnected with the space of border and redefining the role of social media in times of crisis, accelerating the information retrieved through user participation and ranking.

3.2. Proposed scenarios of assessing social inclusivity of open spaces in Greek “arrival” cities.

Participatory platforms

The current research draws inspiration from the spectrum of digital tools presented above and aspires a more inclusive development that would reinvigorate the participation of locals and refugees in the production of public open spaces. Based on UNHCR established goals of community-based approaches, what should be reinforced is the dignity and self-esteem of refugees and the mutual collaboration with local communities (UNHCR 2008). In the framework of “Resiliency humanitarianism”, the perception of refugee is no longer that of “an undifferentiated victim, voiceless and without political agency” (Johnson 2011). Instead, it is a subjectivity that contributes to change rather than just adapting to it.

Therefore, it becomes crucial to integrate refugees in co-creation platforms as stakeholders and develop inclusive prototyping tools for urban planning and decision-making processes. The participation of multiple participants and stakeholder groups is envisioned as a cornerstone in refugees’ integration process, stimulating the social capital of Greek cities and fortifying the social resilience of urban open spaces, where multicultural communities are able to bounce forward and progress.

In this direction, private tech sector could leverage the tracking technologies to benefit refugees more directly, extending away from commercial purposes alone. Social media platforms could propose e-participation processes that would include refugees, bringing forward issues of concern for both, such as housing and job seeking. In addition, urban studies could identify different resilient factors that would benefit locals and refugees alike.

Towards this direction, in the current paper, the issues of resilience recognized are: direct communication, space sharing, activities in public spaces at the scale of the neighborhood, cultural exchange and awareness, story-telling, problem identification and solving, legal and medical support. What is more, the issue of accessibility to digital co-creation platforms becomes crucial for both communities of practice (as denoted by Afzalan et al., 2017) and communities of concern (as defined by UNHCR, 2008), in order to enact policy changes in state institutions as equal political subjectivities.

3.3. Indicators of cultural symbiosis

To achieve that, new media technologies could be used to collect data from public space and formulate specific indicators of cultural symbiosis. Potential indicators in the context of this paper, are:

- Total of local actors that make use of digital tools provided, in order to identify the accessibility to digital technologies for different groups
- Total of refugees that make use of digital tools provided, in order to identify the level of understanding of new media technologies by different groups
- Frequency of the use of specific digital tools by locals and refugees, in order to identify which online platforms are more useful for different groups for specific activities related with self-organization and public open space initiatives.

The proposed indicators of the desired outcomes are:

- Average increase of intercultural community meetings in the park, in order to identify space sharing
- Percentage of children and women refugees that visit the park on daily basis, in order to provide information about the profile of users and equal participation
- A total of bottom-up initiatives and activities performed in the public space for a given timeframe, in order to identify local activities and their frequency
- Proportion of refugees participating in local public activities, in order to identify the participation of refugees to activities organized by locals
- Ratio of refugees, local actors and tourists who are using public open spaces and are performing activities, in order to identify the interaction between local and outsiders
- Percentage of referred cases of racist incidents towards refugees in public parks, in order to identify cases of disputes and lack of awareness

- Percentage of refugees that have rated public space as safe, in order to identify potential reasons of the exclusion of different groups

In addition to the metrics indicators based on data retrieved from different users, digital tools could be also used to organize focus group discussions between different cultural groups and create a common ground for testing different ideas in public spaces. Through focus group discussions, local communities and refugees could incorporate digital tools to share stories, identify problems and propose solutions. In addition, they could implement ideas for the economic and social advancement of backstage open spaces such as pop-up markets for refugees’ products, open markets, collective kitchens, workshops for knowledge sharing, debates and cultural events. In the end, unattended spaces in under-developed areas, where refugees are more likely to reside due to lower living costs, could be transformed into hubs for cultural interaction (fig.2&3).

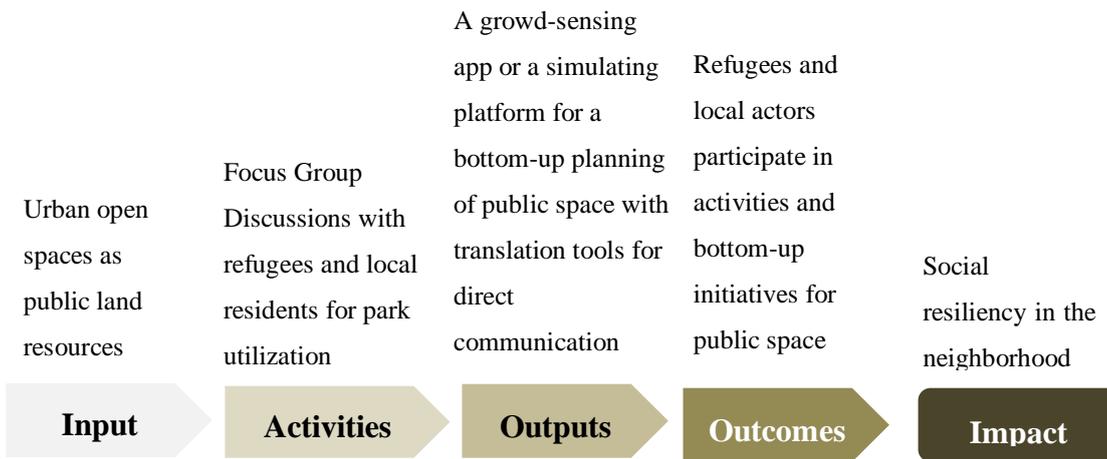


Figure 2. The proposed scenario of long-term social integration of refugees



Figure 3. The research model

4. Conclusion

This paper highlights the dynamic interplay between technology, society and the city, proposing interdisciplinary perspectives and methodologies that would turn the refugee crisis in Greece into an opportunity. The use of Information and Communication Technologies, such as wireless connectivity, co-creation and social media platforms, become powerful tools in favor of urban progress and social resilience. While in their infancy, co-creation digital tools could facilitate the homogenous distribution of information, helping social groups to build their capacity and capability and bounce forward. In the end, what this paper envisions, is the long-term, sustainable partnerships between communities that are socially marginalized in order to build their social resilience and progress together through active participation.

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